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CHINA'S EYE IN THE SKY: AWACS PROGRAMME

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Force multipliers have been part of China's military modernisation efforts. China at present has three variants of airborne early warning aircraft; the KJ-200, KJ-500 and KJ-2000. Chinese AWACS ambition dates back to the sixties with more serious efforts starting in the 1990s. It can be said that China's modern AWACS programme too was a result of lessons learnt from the Gulf War, where the United States extensively used AWACS to coordinate its air operations. Recently, the latest Chinese AEW&C aircraft KJ-500 was seen in air force coatingⁱ which indicates that it is entering service with the PLAAF.ⁱⁱ

Force multipliers aid in the optimum utilisation of the available aircraft. AWACS provides much better situational awareness not only to the fighters controlled by it but also to the entire Command and Control structure via real time data link if integrated to the larger C4ISR systems. In addition to surveillance, reconnaissance and command and control operations, it can perform electronic warfare operations if equipped for such a role.

Earlier, the only PLAAF airborne early warning aircraft hosted on the Y-8 airframe, which is a clone of the Russian AN-12 aircraft, was the KJ-200 - a balanced beam Active Electronically Scanned Array (AESA) radar. Later, China hosted a non-rotating rotodome AWACS antenna over the Y-8 airframe and exported it to Pakistan as the ZDK-03. The KJ-500 too has a similar non-rotating rotodome but is hosted on the Y-9 airframe, which is a stretched up version of the AN-12. The KJ-500 is said to have capabilities similar to the KJ-2000 AWACS.ⁱⁱⁱ



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The KJ-2000 is a product born out of technology denial. China tried to acquire the Israeli Phalcon AWACS but the deal did not materialise owing to pressure from the United States on Israel. Eventually, China came out with their own version of AWACS hosted on the Russian A-50 Beriev platform, which is the AWACS version of the IL-76 airframe. Unlike US AWACS, the Chinese KJ-2000 and KJ-500 main radar mounted atop the fuselage does not rotate to cover 360°, instead the Chinese radar has a triangular planar array^{iv} and uses electronic steering to scan in the azimuth and elevation. The radar is phased array. It is reported that at any moment the KJ-500 and KJ-2000 can simultaneously track 60 – 100 targets.^v

The KJ-2000 is the larger and strategic AEW&C platform, but is limited in numbers and thus does not fill the huge requirement of the PLAAF. China is dependent on foreign sources for the airframe, which is a serious limitation. However, compared to other AEW&C in its inventory, the KJ-2000 is powered by turbofan engines and can fly higher altitude missions compare to the turboprop propelled KJ-200 and KJ-500. This aircraft can cover more area in terms of scanning as well as distance in a given time.

The successful flight-testing of the Yun-20 aircraft might be good news for China's AWACS programme. The airframe could be adopted for China's future AWACS as a replacement for the ageing IL-76. This would also remove PRC's dependence on foreign sources for airframe. However, unless the airframe gets its indigenous turbofan engine the number of such AWACS China could deploy and operate would be limited to engine availability given that the Y-20 airframe is expected to be adapted for several roles.

The other turboprop-powered aircraft have more endurance compared to the KJ-2000. These smaller aircraft can aid the tactical scenario complementing the larger AEW&C aircraft. The KJ-500 radar is claimed to be as capable as the planar array radar of the KJ-2000^{vi}, which is similar in design. The KJ-200 has limited capabilities compared to other two AWACS platforms, as it is just an AEW



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aircraft. Moreover, the use of beam model for housing the radar antenna enables only about 240° coverage leaving a 60° blind spot in the front and rear.

On the efficiency side, the Chinese claim of 470 km radar coverage^{vii} appears to be a bit of an exaggeration as is their claim that the platform is better than the Israeli Phalcon system. Nevertheless, the aircraft could be extremely useful in performing early warning, ELINT, SIGINT and combat air patrol operations. In addition, it could enhance the situational awareness of the wider C4ISR nodes of China's integrated air defence network via real time data link.

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

ⁱ <http://www.akjunshi.com/n/20150225/125202.html>

ⁱⁱ <http://www.janes.com/article/50136/china-s-kj-500-aew-c-platform-enters-service>

ⁱⁱⁱ <http://www.akjunshi.com/n/20150225/125202.html>

^{iv} <http://www.globalsecurity.org/military/world/china/kj-2000.htm>

^v <http://www.janes.com/article/50136/china-s-kj-500-aew-c-platform-enters-service>

^{vi} <http://www.akjunshi.com/n/20150225/125202.html>

^{vii} <http://mil.huanqiu.com/observation/2015-03/6004427.html>